

WHAT IS CLAIMED IS:

~~40B~~ 1. A method of subjecting a material in a liquid to explosive forces, comprising;

containing the material and the liquid in a vessel having a length in a first direction and a width in a second direction perpendicular to the first direction, the length being greater than the width, the vessel having a lower portion having an interior cross sectional shape perpendicular to the first direction;

subjecting the material and the liquid to the explosive forces in the vessel; and

removing the material from the vessel after being subjected to the explosive forces;

wherein the interior cross sectional shape is such that the material is subjected to a portion of the explosive forces reflecting off of an interior surface of the lower portion of the vessel.

2. The method of claim 1, wherein the vessel has a vessel-bottom and a vessel-top, the vessel-top being removeably positionable above the vessel-bottom.

3. The method of claim 2, wherein the interior surface of the vessel-bottom has at least one substantially planar surface extending substantially parallel to the first direction.

4. The method of claim 3, wherein the interior surface of the vessel-bottom has a substantially planar bottom surface extending substantially parallel to the first and second directions.

55B 15. The method of claim 4, wherein the interior surface of the vessel-bottom has a substantially planar side surface extending parallel to the first direction and sloped at an angle of between 0° and 90° relative to the second direction.

6. The method of claim 2, wherein the interior surface of the vessel-bottom is semi-cylindrical.

7. The method of claim 2, further comprising  
connecting the vessel-bottom to a foundation;  
fixing at least one connector to the foundation; and  
reversibly locking the vessel-top to the connector and the foundation with a locking mechanism.

8. The method of claim 7, wherein the locking mechanism comprises a locking plate slidably attached to the vessel-top and an actuator that slides the locking plate relative to the vessel-top, the locking plate having a hole with two portions, one portion sized larger than the connector so that the connector passes through it and the other portion sized smaller than the connector so that when the locking plate is slid to a locking position, the connector prevents the locking plate from moving away from the foundation.

9. The method of claim 2, further comprising connecting the vessel-bottom to a foundation and a lower mounting spring such that the vessel-bottom is resiliently connected to the foundation.

10. The method of claim 9, wherein the vessel-bottom has a flange extending outwardly from the vessel-bottom parallel to the first and second directions, the flange being located vertically between an upper mounting spring and the lower mounting spring.

111 <sup>3B1</sup> The method of claim 2, wherein the vessel-bottom is rigidly fixed to a foundation.

12. The method of claim 2, further comprising venting the vessel-top through a hole through the vessel-top, a deflector being located inside the vessel-top and adjacent the hole so as to allow gas to pass through the hole and substantially prevent the material or liquid from passing through the hole.

13. The method of claim 2, further comprising removing the material and liquid from the vessel through an opening in the vessel created by moving a movable end, the movable end being movable relative to a main portion of the vessel.

14. The method of claim 13, wherein the main portion has a groove in an interior surface and the movable end is a sliding member mounted in the groove such that when the movable end is in a closed position the vessel-bottom contains the material and liquid, and when the movable end is in an open position the material and liquid can be removed from the vessel-bottom through the opening created by sliding the movable end.

15. The method of claim 2, further comprising causing the explosive forces by detonating an explosive charge in the liquid.

16. The method of claim 1, further comprising causing the explosive forces by introducing energy to the liquid by discharging a capacitor through a capacitor discharge electrode located within the vessel.

17. The method of claim 16, wherein the energy is supplied to the capacitor discharge electrode by a capacitor discharge machine attached to the capacitor discharge electrode.

18. The method of claim 17, wherein the vessel is a pipe.

5bB' 19. The method of claim 2, further comprising sequentially positioning the vessel-top above each of a plurality of vessel-bottoms such that the vessel-top is positioned above a first one of the plurality of vessel-bottoms when a first batch of the material and liquid in the first one of the plurality of vessel-bottoms is subjected to the explosive forces.

20. The method of claim 19, further comprising placing a second batch of the material and liquid in a second one of the plurality of vessel-bottoms when the vessel-top is positioned above the first one of the plurality of vessel-bottoms.

21. The method of claim 5, further comprising sequentially positioning the vessel-top above each of a plurality of vessel-bottoms such that the vessel-top is positioned above a first one of the plurality of vessel-bottoms when a first batch of the material and liquid in the first one of the plurality of vessel-bottoms is subjected to the explosive forces.

22. The method of claim 21, further comprising placing a second batch of the material and liquid in a second one of the plurality of vessel-bottoms when the vessel-top is positioned above the first one of the plurality of vessel-bottoms.

23. The method of claim 6, further comprising sequentially positioning the vessel-top above each of a plurality of vessel-bottoms such that the vessel-top is positioned above a first one of the plurality of vessel-bottoms when a first batch of the material and liquid in the first one of the plurality of vessel-bottoms is subjected to the explosive forces.

24. The method of claim 23, further comprising placing a second batch of the material and liquid in a second one of the plurality of vessel-bottoms when the vessel-top is positioned above the first one of the plurality of vessel-bottoms.

25!

26.

27.

28.

29.

The method of claim 2, wherein the material is metal.

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2
--	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	---